

This listing of the claims replaces any and all prior versions and listings of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A composition comprising a biologically active compound[[,]] and a transport moiety[[,]] and a linker capable of self-immolation linking the biologically active compound and the transport moiety, wherein the transport moiety comprises a structure selected from the group consisting of $(ZY)_nZ$, $(ZY)_nZ (ZY)_mZ$, $(ZYY)_nZ$ and $(ZYYY)_nZ$, wherein each Z is L-arginine or D-arginine, and each Y is independently an amino acid that does not comprise an amidino or guanidino moiety, and wherein n is an integer of from 2 to 10 and m is an integer from 3 to 10.
2. (original) The composition according to claim 1, wherein each Y is independently selected from the group consisting of alanine, cysteine, aspartic acid, glutamic acid, phenylalanine, glycine, histidine, isoleucine, lysine, leucine, methionine, asparagine, proline, glutamine, serine, threonine, valine, tryptophan, hydroxyproline, tyrosine, γ -amino butyric acid, β -alanine, sarcosine and ϵ -amino caproic acid.
3. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZY)_nZ$, and wherein n is an integer ranging from 2 to 5.
4. (currently amended) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZY)_nZ (ZY)_mZ$, and wherein [[n m]] is an integer ranging from 4 to 10.
5. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZYY)_nZ$, and wherein n is an integer ranging from 4 to 10.

6. (withdrawn) The composition according to claim 1, wherein the transport moiety comprises the structure $(ZYYY)_nZ$, and wherein n is an integer ranging from 4 to 10.

7. Canceled

8. (original) The composition according to claim 1, wherein Y is a gene-encoded amino acid.

9. (withdrawn) The composition according to claim 1, wherein Y is an amino acid other than a gene-encoded amino acid.

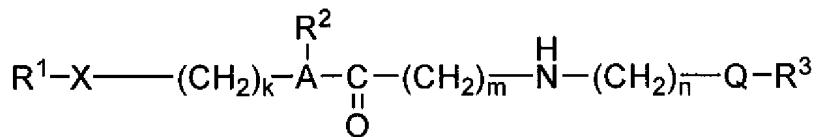
10. (withdrawn) The composition according to claim 3, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 3 or 4.

11. (currently amended) The composition according to claim 4, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and $[[n\ m]]$ is 6, 7 or 8.

12. (withdrawn) The composition according to claim 5, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 6, 7 or 8.

13. (withdrawn; previously presented) The composition according to claim 6, wherein each Y is independently selected from the group consisting of glycine, γ -amino butyric acid, β -alanine and ϵ -amino caproic acid, and n is 6, 7 or 8.

14. (withdrawn; previously presented) The composition according to claim 7 1, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

A is N or CH ;

R^2 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^3 is the transport moiety;

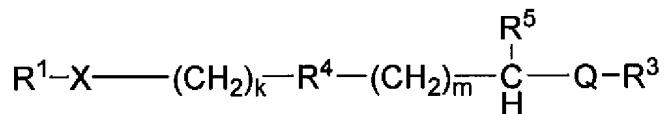
k and m are independently either 1 or 2; and

n is an integer of from 1 to 10.

15. (withdrawn; previously presented) The composition according to claim 14, wherein each of X and Q is independently selected from the group consisting of $-\text{C}(\text{O})\text{O}-$, $-\text{O}-\text{C}(\text{O})-$, $-\text{C}(\text{O})\text{NH}-$, $-\text{NH}-\text{C}(\text{O})-$, $-\text{OC}(\text{O})\text{NH}-$, $-\text{S}-\text{S}-$, $-\text{C}(\text{S})\text{O}-$, $-\text{C}(\text{S})\text{NH}-$, $-\text{NHC}(\text{O})\text{NH}-$, $-\text{SO}_2\text{NH}-$, $-\text{SONH}-$, phosphate, phosphonate and phosphinate.

16. (withdrawn; previously presented) The composition according to claim 14, wherein each of X and Q is independently selected from the group consisting of $-\text{C}(\text{O})\text{O}-$, $-\text{O}-\text{C}(\text{O})-$, $-\text{C}(\text{O})\text{NH}-$, $-\text{NH}-\text{C}(\text{O})-$, $-\text{OC}(\text{O})\text{NH}-$ and $-\text{NHC}(\text{O})\text{NH}-$.

17. (withdrawn; previously presented) The composition according to claim 1, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound ;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

R³ is the transport moiety;

R⁴ is S, O, NR⁶ or CR⁷R⁸;

R⁵ is OH, SH, NHR⁶, or -CONH₂;

R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

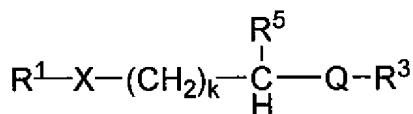
R⁷ and R⁸ are independently hydrogen, alkyl or arylalkyl; and

k and m are independently either 1 or 2.

18. (withdrawn; previously presented) The composition according to claim 17 wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH-, -S-S-, -C(S)O-, -C(S)NH-, -NHC(O)NH-, -SO₂NH-, -SONH-, phosphate, phosphonate and phosphinate.

19. (withdrawn; previously presented) The composition according to claim 17, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH- and -NHC(O)NH-.

20. (withdrawn; previously presented) The composition according to claim 7 1, wherein the conjugate has the following structure:



wherein:

R¹ is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

R³ is the transport moiety;

R⁵ is H, OH, SH, NHR⁶, or -CONH₂;

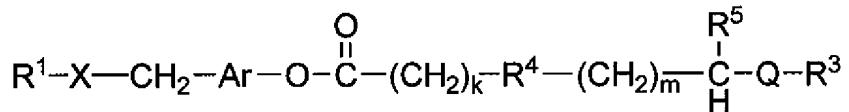
R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl; and

k is 1 or 2.

21. (withdrawn; previously presented) The composition according to claim 20, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH-, -S-S-, -C(S)O-, -C(S)NH-, -NHC(O)NH-, -SO₂NH-, -SONH-, phosphate, phosphonate and phosphinate.

22. (withdrawn; previously presented) The composition according to claim 20, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH- and -NHC(O)NH-.

23. (withdrawn; previously presented) The composition according to claim 7 1, wherein the conjugate has the following structure:



wherein:

R¹ is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

Ar is a substituted or unsubstituted aryl group, wherein the methylene and oxygen substituents are either *ortho* or *para* to one another;

R³ is the transport moiety;

R⁴ is S, O, NR⁶ or CR⁷R⁸;

R⁵ is H, OH, SH, CONHR⁶ or NHR⁶;

R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R⁷ and R⁸ are independently hydrogen or alkyl; and,

k and m are independently either 1 or 2.

24. (withdrawn; previously presented) The composition according to claim 23, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH-, -S-S-, -C(S)O-, -C(S)NH-, -NHC(O)NH-, -SO₂NH-, -SONH-, phosphate, phosphonate and phosphinate.

25. (withdrawn; previously presented) The composition according to claim 23, wherein each of X and Q is independently selected from the group consisting of -C(O)O-, -O-C(O)-, -C(O)NH-, -NH-C(O)-, -OC(O)NH- and -NHC(O)NH-.

26. (withdrawn; previously presented) The composition according to claim 16, wherein A is N, R² is benzyl, k, m and n are 1, and X is -OC(O)-.

27. (withdrawn; previously presented) The composition according to claim 19, wherein R⁴ is S, R⁵ is NHR⁶, R⁶ is hydrogen, methyl, allyl, butyl or phenyl, k and m are 1 and X is -OC(O)-.

28. (withdrawn; previously presented) The composition according to claim 22, wherein R⁵ is NHR⁶, R⁶ is hydrogen, methyl, allyl, butyl or phenyl, k is 2 and X is -OC(O)-.

29. (withdrawn; previously presented) The composition according to claim 25, wherein Ar is an unsubstituted aryl group, R⁴ is S, R⁵ is NHR⁶, R⁶ is hydrogen, methyl, allyl, butyl or phenyl, k and m are 1 and X is -OC(O)-.

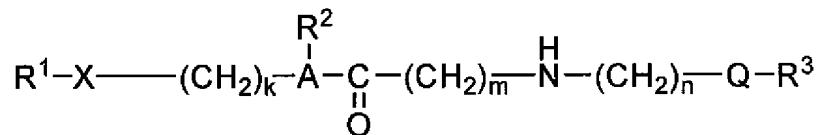
30. (withdrawn; currently amended) A method for increasing the transport of a biologically active compound across a biological membrane comprising:

administering a composition comprising a biologically active compound~~[,]~~ and a transport moiety~~[,]~~ and a linker capable of self-immolation linking the biologically active compound and the transport moiety, wherein the transport compound comprises a structure selected from the group consisting of (ZYZ)_nZ, (ZY)_nZ ~~(ZY)_mZ~~, (ZYY)_nZ and (ZYYY)_nZ, wherein Z is L-arginine or D-arginine, and wherein Y is an amino acid that does not comprise an amidino or guanidino moiety, and wherein n is an integer ranging from 2 to 10 and m is an integer ranging from 3 to 10,

wherein transport of the biologically active biologically active compound across the biological membrane is increased relative to transport of the biologically active compound in the absence of said transport moiety.

31. (withdrawn; previously presented) The method according to claim 30, wherein the biologically active compound is attached to the transport moiety by a linking moiety to form a conjugate.

32. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R¹ is the biologically active compound ;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

A is N or CH;

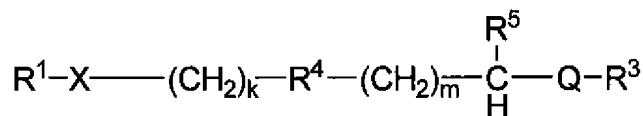
R^2 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^3 is a transport moiety;

k and m are independently either 1 or 2; and

n is an integer of from 1 to 10.

33. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R^1 and R^3 ;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R^1 and R^3 ;

R^3 is a transport moiety;

R^4 is S, O, NR^6 or CR^7R^8 ;

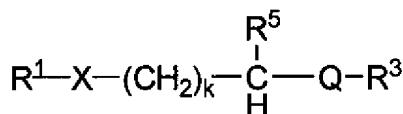
R^5 is OH, SH, NHR^6 , or -CONH₂;

R^6 is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R^7 and R^8 are independently hydrogen, alkyl or arylalkyl; and

k and m are independently either 1 or 2.

34. (withdrawn; previously presented) The method of claim 31, wherein the conjugate has the following structure:



wherein:

R^1 is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

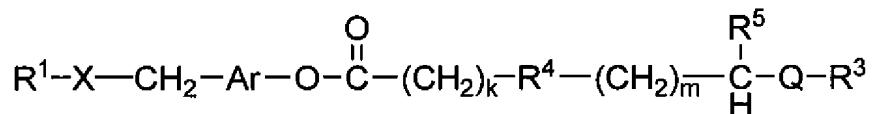
R³ is the transport moiety;

R⁵ is H, OH, SH, NHR⁶, or -CONH₂;

R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl; and

k is 1 or 2.

35. (withdrawn; previously presented) The method of claim 31, wherein the conjugate is of the following structure:



wherein:

R¹ is the biologically active compound;

X is a linkage between a functional group on the biologically active compound and a functional group on the linker between R¹ and R³;

Q is a linkage between a functional group on the transport moiety and a functional group on the linker between R¹ and R³;

Ar is a substituted or unsubstituted aryl group, wherein the methylene and oxygen substituents are either *ortho* or *para* to one another;

R³ is the transport moiety;

R⁴ is S, O, NR⁶ or CR⁷R⁸;

R⁵ is H, OH, SH, CONHR⁶ or NHR⁶;

R⁶ is hydrogen, alkyl, aryl, arylalkyl, acyl or allyl;

R⁷ and R⁸ are independently hydrogen or alkyl; and,

k and m are independently either 1 or 2.